

## PROJECT PROFILE – SUMMARY SHEET

<b><i>Project Introduction</i></b>
1. Project title: <b>Recycling of lead from dead batteries of vehicle</b>
2. Sector :Construction of basic metals (27) and manufacturing of valuable basic metals and non-ferrous metals (2720)
3. Products/Services: <b>Recycling of lead from dead batteries of vehicle</b>
4. Location: Free zone <input type="checkbox"/> Economic special zone <input type="checkbox"/> Industrial Estate <input checked="" type="checkbox"/> Main Land <input type="checkbox"/>
5. Project description:  The main goal of carrying out this plan is recycling <b>of lead from dead batteries of vehicle.</b>
6. Annual capacity: 319200 kilograms in a year.

<b><i>Project Status</i></b>	
7. Local / internal raw material access inside of country or province: The materials are supplied in the country .	
8. Sale: Anticipated internal market: 100% <span style="float: right;">Anticipated export market: ...%</span>	
9. Construction Period (from beginning of activity to commercial activity): 24 months	
<b>Schedule</b>	Beginning of activity: In-site beginning of activity: End of project: Commercial activity beginning:

**10. Project Status:**

- Feasibility study available? Yes  No
- Required land provided? Yes  No
- Legal permissions (establishment license, environment, etc) taken? Yes  No
- Partnership agreement concluded with local/foreign investor? Yes  No
- Financing agreement concluded? Yes  No
- Agreement with local / foreign contractor(s) concluded? Yes  No
- Infrastructural utilities (electricity, water supply, telecommunication, fuel, road, etc) procured? Yes  No
- List of know-how, machinery, equipment, as well as seller / builder companies defined? Yes  No
- Purchase agreement for machinery, equipment and technology concluded? Yes  No

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**Financial Structure****11. Finance**

Description	Required Local Currency			Required Foreign Currency (Thousand Dollar)	Total in Thousand Dollar
	Million Rials	Rate	Equivalent in Thousand Dollar		
Fix Capital	35,424	87000 Rials for each Dollar	407	0	407
Working Capital	1,984		23	0	23
Total Investment	37,408		430	0	430

- Value of local equipment/machinery: **39** thousand dollars
- Value of foreign equipment/machinery: ..... thousand dollars
- Value of foreign technology: ..... thousand dollars
- Value of local technology: ..... Million dollars
- Net Present Value (NPV): **24234,64** Million Rials for 10 Years, discount rate: 20%
- Internal Rate of Return (IRR): **33,67%**
- Payback Period (PP): **39,91%**

**General Information**

12. Project Type: Establishment  Expansion and completion

**13. Company Profile:**

- Name (legal /natural persons):
- Current activity of company:
- Address:

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-Tel: Fax:  
 -E-mail: Web site:  
 -Legal structure of company: private sector  public sector  other

## Plan name: Recycling of lead

### Product introduction

Product ISIC Code and its tariffs code are as follows:

No.	Description	10-digit ISIC Code	8-digit ISIC Code	Tariff Code
1	lead ingot from waste products	2720512528	37201144 27201337	72045000
2	lead ingot from raw materials	2720512474	-	78019100 78019910 78019920 78011000 78019990
3	polypropylene granule-pipe grade	3720512325	24131582	39021010

### Introduction of product applications

#### A. Lead

Today the main application of lead is in batteries and the most important one is in batteries of vehicle. In spite of decrease in above-mentioned applications, by increasing vehicle production, production of lead acidic batteries will increase. In regard to market growth of vehicle in China and India, acidic batteries demand has been increased.

In addition to batteries of vehicles, batteries are used in cell phone centers, electric cars, electric vans and emergency power supply for computers and hospitals. Still lead is used in some of chemical compounds and for example, it is applied in buildings resistant to wind and rain to protect power cables and ammunition.

It is necessary to say that the used lead in battery construction should have 99.98% of purity. So, regarding that produced lead of this plan is from batteries landfill, its reuse is appropriate in batteries construction.

Other applications of lead metal and its compounds can be mentioned as follows:

1. Lead, in the form of lead tetraethyl, is added to gasoline in order to better burning.
2. Lead is used in making ammunition and military industry.

3. Due to high density, lead is used in atomic reactors walls and x-ray and radiography room as an absorptive of harmful rays.

4. Lead can be used in bed of galvanization bathroom.

5. Lead, tin and zink alloy in soldering industry, lead and tin alloy in printing industry , lead and silver alloy in providing used anodes in electrolyze unit of zinc and lead industry, arsenic and antimony are used in different industries and finally alloy of lead, tin, copper, and antimony, arsenic and cadium are used as an anti-abrasion in bearings construction.

6. Lead oxides are used in paint industry and match making.

All above-mentioned cases show that recycling lead for reusing it in industry, is necessary. All applications especially batteries require to recycle with following safety and hygientic principles.

## B. Propylene granules

This plastic has many applications in many industries. While granule produced of this plan is recycled-type, so its usages are special and it is used in places that being grade food is not discussed. Costruction of industrial pieces, reuse for production of batteries, construction of dishes for keeping chemical substances, manufacture of household products and so one, can be introduced as some applications of this plastic.

## Proposed places for plan

According to benefits of establishment in industrial estates and areas, industrial estates of Lorestan province are suggested for conducting the project.

## Raw ,auxiliary and packing materials

No	Raw , auxiliary and packing materials	Unit	Consumption rate per year	Unit price (Rial)	Annual cost (m/r)
1	lead dead battery	number	30,000	800,000	24000
2	plastic sack	kilogram	100	15,000	1,5
3	steel band	kilogram	300	38,200	11,46
<b>Total</b>					<b>24012,96</b>

## Sales plan and target markets

NO	Description	unit weight	Capacity (ton)	Unit price (rial)	Annual sale (m/r)
1	lead ingot	kilogram	240,000	210,000	50,400
2	lead oxide	kilogram	7,200	35,000	252
3	recycled plastic	kilogram	72,000	40,000	2,880
<b>Total</b>			<b>319,200</b>	<b>-</b>	<b>53,532</b>

## Annual nominal and practical capacities

Entry capacity of production line is 319200 kilograms in an 8-hour shift in 300 working days. Practical capacity of this plan, regarding the unpredicted factors of stop working and also repair and maintenance, is 287280 kilograms with 90% efficiency of nominal capacity.

## Production method and desired technology

After transferring dead batteries to workshop scope, the first activity is separation of plastic from the lead inside the battery. This process is done by human work force and by some tools such as hammer, big nail, mallet. After separation, plastic is transferred to depot location of scrap plastic to turn into granule. Lead scraps are gathered and melted in furnace, after melting in 320 degrees of centigrade, with a big scoop is poured into the molds and exposed to the air about one or two hours to cool down. After cooling down, obtained ingots are sent out of molds and transferred to store.

## The plan investment costs

The fixed plan investment costs is estimated to be 35424,06 million Rials and the working capital is estimated to be 1984,27 million Rials.

### The plan investment costs

Description	Total (million rials)	percent age
Land	1,750	5%
Landscaping	738	2%
Building	16,880	45%
Machinery and equipment	3,360	9%
Installations	3,134	8%
Laboratory equipment and supplies	2,000	5%
Vehicles	4,015	11%

Description	Total (million rials)	percent age
Workshop equipment	91	0%
Service and administrative equipment	549	1%
Unexpected and miscellaneous	1,626	4%
<b>Total fixed assets</b>	<b>34,142,97</b>	<b>91%</b>
Pre-exploitation costs	1,281,08	3%
<b>Total fixed investment costs</b>	<b>35,424,06</b>	<b>95%</b>
Working capital	1,984,27	5%
Other assets	0	0%
<b>Total plan investment costs</b>	<b>37,408,33</b>	<b>100%</b>

### The plan production costs

The annual production costs are estimated to be 36643,27 million Rials.

#### Production costs

No	Description	Cost (million rials)	cost in practical capacity (million rials)
1	Raw, auxiliary and packing materials	24,014	21,612
2	Production salary and wage	3,854	3,738
3	Water, electricity, fuel and communication	1,080	994
4	Insurance	55	55
5	Repair and maintenance	1,867	1,718
6	Marketing and ads	1,071	985
7	Production unpredicted and miscellaneous	1,543	1,420
8	Depreciation	3,159	3,159
<b>Total</b>		<b>36643,27</b>	<b>33681,38</b>

### Economic indices

Table 1. Economic indices

Description	Value-measurement scale
<b>NPV (net present value)</b>	<b>24234,64million rials</b>
<b>IRR(internal rate of return)</b>	<b>33,67%</b>
<b>PBP (period of return of capital)</b>	<b>2.57years</b>

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